



COVID-19

Evaluating and Caring for Patients with Post-COVID Conditions: Interim Guidance

Updated June 14, 2021

This content offers detailed interim guidance for healthcare providers. For a general introduction to post-COVID conditions, see the overview for healthcare providers. Or, for the general public, see a brief summary of the long-term effects.

Table of Contents

Key Points	
ackground	
eneral Clinical Considerations	
atient History and Physical Exam	
ssessment and Testing	
Management of Post-COVID Conditions	
ublic Health Recommendations	
uture Directions and Resources	

Key Points

- The term "Post-COVID Conditions" is an umbrella term for the wide range of physical and mental health
 consequences experienced by some patients that are present four or more weeks after SARS-CoV-2 infection,
 including by patients who had initial mild or asymptomatic acute infection.
- Based on current information, many post-COVID conditions can be managed by primary care providers, with the incorporation of patient-centered approaches to optimize the quality of life and function in affected patients.
- Objective laboratory or imaging findings should not be used as the only measure or assessment of a patient's wellbeing; lack of laboratory or imaging abnormalities does not invalidate the existence, severity, or importance of a patient's symptoms or conditions.
- Healthcare professionals and patients are encouraged to set achievable goals through shared decision-making and to
 approach treatment by focusing on specific symptoms (e.g., headache) or conditions (e.g., dysautonomia); a
 comprehensive management plan focusing on improving physical, mental, and social wellbeing may be helpful for
 some patients.

Understanding of post-COVID conditions remains incomplete and guidance for healthcare professionals will likely change over time as the evidence evolves.

References

See All References

- 1. Nalbandian A, Sehgal K, Gupta A, Madhavan MV, et al. Post-acute COVID-19 syndrome. Nat Med. 2021 Apr;27(4):601-615. doi:10.1038/s41591-021-01283-z ☐
- 2. Policy Brief 39 In the Wake of the Pandemic Preparing for Long COVID. Accessed at: https://apps.who.int/iris/bitstream/handle/10665/339629/Policy-brief-39-1997-8073-eng.pdf
- 3. Huang Y, Pinto MD, Borelli JL, et al. COVID Symptoms, Symptom Clusters, and Predictors for Becoming a Long-Hauler: Looking for Clarity in the Haze of the Pandemic. medRxiv. 2021 Mar 5. doi: 10.1101/2021.03.03.21252086 ☐
- 4. Havervall S, Rosell A, Phillipson M, Mangsbo SM, Nilsson P, Hober S, Thålin C. Symptoms and Functional Impairment Assessed 8 Months After Mild COVID-19 Among Health Care Workers. JAMA. 2021 Apr 7. doi:10.1001/jama.2021.5612

 ☐
- 5. Office of National Statistics. Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK: 1 April 2021. Accessed at: https://www.ons.gov.uk/peoplepopulationandcommunity /healthandsocialcare/conditionsanddiseases/bulletins /prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/1april2021
- 6. Chevinsky JR, Tao G, Lavery AM, et al. Late conditions diagnosed 1-4 months following an initial COVID-19 encounter: a matched cohort study using inpatient and outpatient administrative data United States, March 1-June 30, 2020. Clin Infect Dis. 2021 Apr 28. doi: 10.1093/cid/ciab338 ☑
- 7. Hernandez-Romieu AC, Leung S, Mbanya A, et al. Health Care Utilization and Clinical Characteristics of Nonhospitalized Adults in an Integrated Health Care System 28-180 Days After COVID-19 Diagnosis Georgia, May 2020-March 2021. MMWR Morb Mortal Wkly Rep. 2021 Apr 30;70(17):644-650. doi: 10.15585/mmwr.mm7017e3
- 8. Lund LC, Hallas J, Nielsen H, Koch A, Mogensen SH, Brun NC, Christiansen CF, Thomsen RW, Pottegård A. Post-acute effects of SARS-CoV-2 infection in individuals not requiring hospital admission: a Danish population-based cohort study. Lancet Infect Dis. 2021 May 10. doi:10.1016/S1473-3099(21)00211-5
- 9. Huang C, Huang L, Wang Y, et al. 6-month consequences of COVID-19 in patients discharged from hospital: a cohort study. Lancet. 2021 Jan 16;397(10270):220-232. doi:10.1016/S0140-6736(20)32656-8 ☐
- 10. Pavli A, Theodoridou M, Maltezou HC. Post-COVID syndrome: Incidence, clinical spectrum, and challenges for primary healthcare professionals. Arch Med Res. 2021 May 4. doi:10.1016/j.arcmed.2021.03.010 ☐
- 11. Cabrera Martimbianco AL, Pacheco RL, Bagattini ÂM, et al. Frequency, signs and symptoms, and criteria adopted for long COVID: a systematic review. Int J Clin Pract. 2021 May 11:e14357. doi:10.1111/ijcp.14357
- 12. Rando HM, Bennett TD, Byrd JB, et al. Challenges in defining Long COVID: Striking differences across literature, Electronic Health Records, and patient-reported information. medRxiv. 2021 Mar 26. doi:10.1101/2021.03.20.21253896 ☑
- 13. Office of National Statistics. Update on long COVID prevalence estimate. Accessed at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962830 /s1079-ons-update-on-long-covid-prevalence-estimate.pdf
- 15. Say D, Crawford N, McNab S, et al. Post-acute COVID-19 outcomes in children with mild and asymptomatic disease. Lancet Child Adolesc Health. 2021 Apr 20. doi:10.1016/S2352-4642(21)00124-3 ☐
- 16. Osmanov I, Spiridonova E, Bobkova P, et al. Risk factors for long covid in previously hospitalised children using the ISARIC Global follow-up protocol: A prospective cohort study. medRxiv. 2021 Apr 26. doi:10.1101/2021.04.26.21256110 ☑
- 17. Assaf G, Davis H, McCorkell L, et al. What does COVID-19 recovery actually look like? An analysis of the prolonged COVID-19 symptoms survey by Patient-Led Research Team. Patient Led Research for COVID-19, 2020. ☑
- **18.** Lam MH, Wing YK, Yu MW, et al. Mental morbidities and chronic fatigue in severe acute respiratory syndrome survivors: long-term follow-up. Arch Intern Med. 2009 Dec 14;169(22):2142-7. doi:10.1001/archinternmed.2009.384 ☑

- 19. Lee SH, Shin HS, Park HY, et al. Depression as a Mediator of Chronic Fatigue and Post-Traumatic Stress Symptoms in Middle East Respiratory Syndrome Survivors. Psychiatry Investig. 2019 Jan;16(1):59-64. doi:10.30773/pi.2018.10.22.3.
 ☐
- 20. Lambert N, Survivor Corps, El-Azab SA, et al. COVID-19 Survivors' Reports of the Timing, Duration, and Health Impacts of Post-Acute Sequelae of SARS-CoV-2 (PASC) Infection. medRxiv 2021.03.22.21254026; doi:10.1101/2021.03.22.21254026 ☐
- 21. Colbenson GA, Johnson A, Wilson ME. Post-intensive care syndrome: impact, prevention, and management. Breathe (Sheff). 2019 Jun;15(2):98-101. doi:10.1183/20734735.0013-2019 ☐
- 22. Lavery AM, Preston LE, Ko JY, et al. Characteristics of Hospitalized COVID-19 Patients Discharged and Experiencing Same-Hospital Readmission United States, March-August 2020. MMWR Morb Mortal Wkly Rep. 2020 Nov 13;69(45):1695-1699. doi: 10.15585/mmwr.mm6945e2
- 23. Chopra V, Flanders SA, O'Malley M, et al. Sixty-Day Outcomes Among Patients Hospitalized With COVID-19. Ann Intern Med. 2020 Nov 11. doi: 10.7326/M20-5661 ☐
- 24. Ayoubkhani D, Khunti K, Nafilyan V, et al. Post-covid syndrome in individuals admitted to hospital with covid-19: retrospective cohort study. BMJ. 2021 Mar 31;372:n693. doi:10.1136/bmj.n693 ☐
- 25. Atalla E, Kalligeros M, Giampaolo G, et al. Readmissions among patients with COVID-19. Int J Clin Pract. 2020 Sep 7:e13700. doi:10.1111/ijcp.13700 ☑
- 26. Donnelly JP, Wang XQ, Iwashyna TJ, et al. Readmission and Death After Initial Hospital Discharge Among Patients With COVID-19 in a Large Multihospital System. JAMA. 2021 Jan 19;325(3):304-306. doi:10.1001/jama.2020.21465
- 27. Somani SS, Richter F, Fuster V, et al. Characterization of Patients Who Return to Hospital Following Discharge from Hospitalization for COVID-19. J Gen Intern Med. 2020 Oct;35(10):2838-2844. doi:10.1007/s11606-020-06120-6

 ☐
- 28. Jeon WH, Seon JY, Park SY, et al. Analysis of Risk Factors on Readmission Cases of COVID-19 in the Republic of Korea: Using Nationwide Health Claims Data. Int J Environ Res Public Health. 2020 Aug 12;17(16). doi:10.3390/ijerph17165844
 ☐
- 29. Akinbami LJ, Petersen LR, Sami S, et al. COVID-19 symptoms and SARS-CoV-2 antibody positivity in a large survey of first responders and healthcare personnel, May-July 2020. Clin Infect Dis. 2021 Jan 30. doi:10.1093/cid/ciab080 ☑
- 30. Petersen LR, Sami S, Vuong N, et al. Lack of antibodies to SARS-CoV-2 in a large cohort of previously infected persons. Clin Infect Dis. 2020 Nov 4.
- 31. American Academy of Pediatrics. COVID-19 Interim Guidance: Return to Sports and Physical Activity.

 Accessed at: https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-interim-guidance-return-to-sports/
- 32. Greenhalgh T, Knight M, A'Court C, et al. Management of post-acute covid-19 in primary care. BMJ. 2020;370:m3026. doi:10.1136/bmj.m3026 ☐
- 33. COVID-19 Rapid Guideline: Managing the Long-Term Effects of COVID-19. Accessed at: https://www.nice.org.uk/guidance/NG188 ☑
- 34. Sisó-Almirall A, Brito-Zerón P, Conangla Ferrín L, et al. Long Covid-19: Proposed Primary Care Clinical Guidelines for Diagnosis and Disease Management. Int J Environ Res Public Health. 2021 Apr 20;18(8). doi:10.3390/ijerph18084350

 ☐

- Systematic Review and Meta-Analysis. Res Sq. 2021 Mar 1. doi:10.2139/ssrn.3769978 🔀
- 40. Al-Aly Z, Xie Y, Bowe B. High-dimensional characterization of post-acute sequalae of COVID-19. Nature. 2021 Apr 22. doi:10.1038/s41586-021-03553-9 ☑
- 41. Sudre CH, Murray B, Varsavsky T, et al. Attributes and predictors of long COVID. Nat Med. 2021 Apr;27(4):626-631. doi:10.1038/s41591-021-01292-y ☐
- 42. Lund LC, Hallas J, Nielsen H, et al. Post-acute effects of SARS-CoV-2 infection in individuals not requiring hospital admission: a Danish population-based cohort study. Lancet Infect Dis. 2021 May 10. doi:10.1016/S1473-3099(21)00211-5 ☑
- 44. Cellai M, O'Keefe JB. Characterization of Prolonged COVID-19 Symptoms in an Outpatient Telemedicine Clinic. Open Forum Infect Dis. 2020 Oct;7(10):ofaa420. doi:10.1093/ofid/ofaa420 ☑
- 45. Logue JK, Franko NM, McCulloch DJ, et al. Sequelae in Adults at 6 Months After COVID-19 Infection. JAMA Netw Open. 2021 Feb 1;4(2):e210830. doi:10.1001/jamanetworkopen.2021.0830 ☐
- 46. del Rio C, Collins LF, Malani P. Long-term health consequences of COVID-19. JAMA. 2020. doi:10.1001/jama.2020.19719 ☑
- 47. Taquet M, Geddes JR, Husain M, et al. 6-month neurological and psychiatric outcomes in 236 379 survivors of COVID-19: a retrospective cohort study using electronic health records. Lancet Psychiatry. 20 ♣ Updated June 14, 2021 May;8(5):416-427. doi:10.1016/S2215-0366(21)00084-5 ☑
- 48. Barker-Davies RM, O'Sullivan O, Senaratne KPP, et al. The Stanford Hall consensus statement for post-COVID-19 rehabilitation. Br J Sports Med. 2020 Aug;54(16):949-959. doi:10.1136/bjsports-2020-102596 ☑
- 49. Li Z, Zheng C, Duan C, et al. Rehabilitation needs of the first cohort of post-acute COVID-19 patients in Hubei, China. Eur J Phys Rehabil Med. 2020 Jun;56(3):339-344. doi: 10.23736/S1973-9087.20.06298-X. PMID: 32672029. doi:10.23736/s1973-9087.20.06298-x

 ☐
- 50. Daynes E, Gerlis C, Chaplin E, et al. Early experiences of rehabilitation for individuals post-COVID to improve fatigue, breathlessness exercise capacity and cognition A cohort study. Chron Respir Dis. 2021 Jan-Dec;18:14799731211015691. doi:10.1177%2F14799731211015691
 ☐
- 51. Berger Z, Altiery DE Jesus V, Assoumou SA, et al. Long COVID and Health Inequities: The Role of Primary Care. Milbank Q. 2021 Mar 30. doi:10.1111/1468-0009.12505 ☑